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**Relationships Between Recreation
Behavior and Enviornmental
Stress**

RELATIONSHIPS BETWEEN RECREATION BEHAVIOR
AND ENVIRONMENTAL STRESS

B. L. Driver and Richard C. Knopf

B. L. Driver is recreation research project leader of the U. S. Forest Service, Rocky Mountain Forest and Range Experiment Station in Fort Collins, Colorado. Richard Knopf is research associate with the Department of Recreation Resources, Colorado State University.

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RELATIONSHIPS BETWEEN RECREATION BEHAVIOR
AND ENVIRONMENTAL STRESS

Environmental designers and managers have the task of creating and maintaining environmental conditions to support our many social service systems. Among the public demands served by these systems are those for education, health, housing, communication, transportation, sanitation facilities, and recreation opportunities. This paper considers a particular type of recreation-related demand that finds its source in adverse conditions experienced in home and work environments.

In recent years, demand for recreational opportunities has grown exponentially. This growth is documented by statistics on participation in outdoor recreation activities. For example, a national household survey in 1965 showed that more than half of the nation's population aged 12 or over participated at least once during the summer of that year in picnicking, driving for pleasure, sightseeing, swimming, or walking for pleasure (U.S. Bureau of Outdoor Recreation, 1967). Numbers of visitors at developed outdoor recreation areas have increased at least 5 percent compounded annually during the past several decades (Clawson and Knetsch, 1966; U.S. Department of the Interior, 1971). For many types of areas, especially back-country or wilderness ones, the rates during the past years have been in excess of 20 percent per year (U.S. Forest Service, 1975). These are interesting growth rates when compared with selected baseline social indicators. For example, the U.S. population and personal disposable income have both increased at less than 3 percent compounded annually during the same period, and per capita energy consumption has increased at less than 5 percent per year (Executive Office of the President, 1973).

Despite the apparent growing social importance of recreation and the fact that each year we have allocated more resources to provide additional opportunities, we do not have good measures of what we are "producing" by these allocations. Traditional measures used in planning and management decisions, such as numbers of users and visitor days, do not tell much about the social benefits produced. In addition to understanding better the benefits produced from recreational engagements, we need to learn more about the factors which precipitate rapidly increasing demand for additional opportunities. Particularly important from a design-planning viewpoint is information on the differential recreation demands and preferences of various people characterized by pertinent background variables, such as income, race, age, stage in family cycle, environmental conditions exposed to at home and on the job, and other antecedent conditions that influence recreation choice and the nature of personal benefits sought from participation.

This paper reports initial results of a long-term research program addressing these issues. It focuses on the value of recreational opportunities in helping people mediate the effects of different types of adverse stimuli or situations experienced in home, neighborhood and work environments.

CONCEPTUAL ORIENTATION

A number of behavioral scientists view most, if not all, human behavior as problem solving phenomena. Any life situation may be defined as a problem posed to the organism according to criteria used to test for successful problem resolution (Luce and Raiffa, 1957; White, 1959; Miller, Galanter and Pribram, 1960; and Howard and Scott, 1965). Within this

framework, a life situation is a problem whenever it defines a gap between an actual (or perceived probable) state and one that is more preferred.^{1/} A problem, therefore, is not defined as a negative-adversive state. Instead, it is defined in terms of a relative preference criterion, so an individual would have a problem if he or she is in a state of bliss and preferred more bliss.

Energy is expended in problem solving and successful solutions lead to "mastery." Mastery requires an adequate source of energy, the right resources (including information) needed to solve the problem, and the condition that the problem be solvable. When mastery is attained, the organism will be in a better position thenceforward to handle and master that particular kind of problem. There is a lasting effect of mastery. More detailed discussion of these ideas is presented by Knopf (1972).

Participation in recreation activities is one kind of behavior that aids in problem solving. In short, we suggest that recreational times and spaces are used to a considerable degree by people to help satisfy preferences that are not satisfied during their non-recreational times (Knopf, et al., 1973).^{2/} Within that orientation, our research has been structured to determine (a) the relative importance of different preferences of recreationists engaging in a specific leisure pursuit, (b) how preferences differ between different types of recreationists, and (c) the influence of home and work environmental conditions on these preferences.

HYPOTHESES

During the course of our research on quantification of outdoor recreationists' preferences, we have found that many, if not most, types of recreationists place high value on their participation as a means of escaping temporarily from a variety of adverse conditions experienced in

home, neighborhood and work environments. These preferences are termed "stress-related recreation preferences" and form the bases for the following three propositions to be considered in this paper:

1. Among a wide variety of reasons for engaging in outdoor recreation activities, stress-related reasons will rank relatively high in importance for most activities.
2. Different recreation activities will be appraised differently as to their relative importance for stress-mediating purposes.
3. The relative strength of specific stress-related preferences will be systematically related to conditions experienced in home, neighborhood and work environments.

METHOD^{3/}

In an attempt to quantify selected recreation-related preferences in several studies, over 4,500 recreationists engaging in different activities have been asked to rate the relative importance of a wide variety of items as reasons for participating in that activity. Responses were recorded on modified Likert scale formats. Some studies used 4-point scales, others 6-point scales, and still others used 9-point scales; but in each study the format provided an opportunity for the respondent to register the degree to which an item was important as a reason for deciding to engage in a particular activity. Emphasis in wording and in administering the questionnaires was on getting the recreationists to think back to the importance of the reasons at the time they were deciding to engage. We, therefore, are interested in their aspirations or the relative importance assigned to specific consequences that are likely to result from their choice of a particular activity.

Response alternatives were given numerical scores and these scores were subjected to cluster analysis (Kulik et al., 1970). This technique

allowed us to identify those groups or clusters of items that exhibited common patterns of response. Means of each cluster or scale were used to assess the intensity of a specific preference state. Items within a scale are assumed to measure a common preference. Thus, clusters of achievement-related items are said to measure an achievement-related preference (or a specific dimension of such), and clusters of items that describe desires to see and learn new things are said to measure exploratory preference, etc.

Items were retained for a scale only if they (1) intercorrelated with an average Pearson product-moment correlation coefficient of at least 0.4, and (2) did not reduce the Cronbach Alpha of the scale below 0.6 (Nunnally, 1967). Also, only those items that clustered for populations stratified by each of several descriptive characteristics, such as age, sex and party size, were retained in a scale. Most of our scales each contain more than five items and have average r values of 0.5 to 0.8, and Alpha values of 0.8 or higher. The two major criteria guiding the choice of preferences for which a scale would be developed were a particular type of preference should (1) be pervasive (across large numbers of users) and (2) it should be managerially relevant.

Because our conceptual orientation fits nicely within the Fishbein and Ajzen (1974 and 1975) approach to studying relationships between expectations, values and behavior, we call a preference scale an Expected and Desired Consequence Scale (abbreviated hereafter as Desired Consequence Scales, or DCS). In our scales, emphasis has been on measuring the preference or value component (i.e., or the incentive for the choice, Atkinson and Birch, 1972) rather than on the expectancy component. Since most outdoor recreationists are repeat users and since most of our interviewing is done on-site, we have assumed that there is a reasonably close match

between expectancy and occurrence for most activities.^{4/} There are known exceptions, however, to this assumption, such as for overnight wilderness users, so current research is examining these components separately.

Currently, we have 42 different preference scales in various stages of development. These scales represent a broad range of recreation-related preferences such as those for achievement or skill development, affiliation, exploration, dominance, social recognition, experiencing nature, nostalgia, risk-taking, family togetherness, variety and over 16 different types of stress mediation.

Rather than attempt to define the word "stress," we use the words "stress-related preferences" to refer to the recreationists' desires to escape temporarily from specific stimuli or conditions in home, neighborhood and work environments that are perceived to be adverse. Our early stress-related preference scales were rather general and had such titles as "Temporary Escape." It was soon realized, however, that people do not escape from things in general but from rather specific stimuli, such as noise and other physical stresses, from role overload situations, from too much structured and demanding mental engagement, from crowds of people, from unsafe neighborhoods and so on. This changing orientation is reflected in the names given to the stress-related scales in the following tables. Each item making up those scales was selected to define a specific adverse stimuli or situation that might be avoided temporarily in recreation times or spaces.

RESULTS

RELATIVE IMPORTANCE OF STRESS-RELATED RECREATION PREFERENCES

The first group of tables bear on the idea that stress-related preferences rank high in importance as reasons for engaging in most types of

outdoor recreation but that this importance will vary between activities. Because our primary interest was on developing and refining our DCS's, we would sample test groups of about 50 recreationists participating in a specific activity. So, although the test groups were sampled randomly, we did not attempt to get a larger representative sample. For that reason, sample sizes are low in some of the tables discussed subsequently, and results cannot be generalized with confidence beyond the test groups for which they were found.

Table 1 shows the mean responses of seven different test groups of Michigan recreationists to 13 DCS's. The more obvious stress-related scales (Nos. 2, 3, 6 and 8, and especially 2 and 3) ranked comparatively high among the 13 scales shown. Also, even though General Escape and Mental Change ranked comparatively high for most of the 7 activities shown, there were differences between activities. For example, General Escape was less important to the test group of tennis players studied than it was to the picnickers.

Davis (1973) found similar results in a study of three different types of recreationists, including fishermen, using the 1,000-acre Belle Isle Park which is an island park located in the middle of the Detroit River about one-fourth mile from the inner city of Detroit. Only 4 DCS's were used in that study (Table 2). Except for picnickers, the Temporary Escape scale received the highest mean score, and the score was high for them, too.

In a national survey of over 1,300 households in 1972, selected individual items from some of our DC scales were included to appraise the relative importance of these reasons for the respondents' participation in their most favorite form of outdoor recreation, whatever it

was (Mandell and Marans, 1972). Responses were to a 4-point scale format. The summary results, not elaborated by specific activities, are shown in Table 3. Although a clear distinction cannot be made between stress-related and non-stress related reasons, the desires reflected in 1 and 3 are obviously stress-related. Both were valued highly, and it should be noted that about 60 percent of the respondents in this national sample reported that relieving tensions was a very important reason for engaging in their favorite outdoor recreation activity.

Grubb (1973, 1975) did a study of relationships between levels of perceived job boredom and the recreation behavior of 237 male auto factory workers in a large midwestern city (Table 4). The workers completed a group-administered questionnaire which contained questions soliciting information on a variety of variables. Included was a question asking them to rate the relative importance of a number of desired consequences, which were listed as reasons for engaging in their favorite type of recreation activity, whatever it was. In that study stress-related reasons (i.e., Nos. 1, 2 and 3) ranked the highest in importance, and these reasons include those associated with work conditions.

Space does not permit displaying the results of other studies giving the same results. These include a survey in 1971 which indicated the preference rankings of 1,145 campers in Michigan State Parks (unpublished data) and a survey in 1971 of 834 canoeists, 593 trout fishermen and 255 cottage owners using Michigan's Au Sable River (Bassett, et al., 1972). The pattern of response in both of these studies was similar to those reported above. Stress-related reasons were rated comparatively high in importance among the many reasons presented and the activities differed in their relative stress-mediating values.

RELATIONSHIPS BETWEEN STRESS-RELATED PREFERENCES AND HOME AND WORK ENVIRONMENTS

During our studies we have observed that different types of recreationists (defined by city size, age, race and income variables) have scored differently on our stress-related DC scales. In an attempt to determine the causes of these differences, we have refined those scales to focus on specific types of stress or adverse stimuli.

In 1972, 16 different stress-related scales were administered to test groups of five different types of Michigan recreationists. Responses were made to a 6-point scale on which 6 and 1 designated Extremely and Not At All Important, respectively. Data of Table 5 show differences of the more refined stress scales both between and within activities (i.e., test groups). Given the relatedness of the several scales, the differences between scales within an activity are remarkably large for a 6-point scale.^{5/} Although differences exist between activities for any one scale, these differences are less pronounced at this level of specificity.

To understand better why many outdoor recreation activities are valued as being relatively important for purposes of stress mediation and to get measures of the criterion validity of these scales, questions soliciting perceptions of neighborhood and home environment conditions were included by Mandell and Marans (1972). They developed a Temporary Escape scale by combining reasons 1, 3 and 4 in Table 3. Percentage distributions of responses to their 4-point scale were then computed for 5 different levels of perceived neighborhood quality which were measured along several specific dimensions on a semantic differential scale. The data in Table 6 indicate that the four dimensions of neighborhood

quality are not independent. Nevertheless, the table shows that respondents who perceived their neighborhood quality to be low placed greater importance on engaging in their favorite form of outdoor recreation for purposes of temporary escape than did those respondents who perceived their neighborhood quality to be higher.

In 1972, we also administered some of our more specific stress-related scales to 100 campers in state parks in Michigan. The results presented in Table 7 help confirm the previous findings in that systematic relationships existed between specific stress-related preference scales and those specific dimensions of neighborhood quality that one would judge a priori to be associated.

Both Tables 6 and 7 indicate that those respondents who perceived their neighborhood environment to be more stressful placed greater importance (as measured by the higher mean values) on recreation for coping with these stresses (such as to escape physical stressors) than did their counterpart respondents who perceived their neighborhoods to be less stressful.^{6/}

From data collected in an unreported statewide study of campers in Michigan's state parks by S. Ross Tocher (of The University of Michigan) during the summer of 1971, we can make some similar cross comparisons of responses to individual items in our stress scales. The percentages shown in Table 8 are for 6-point scales and represent subpopulations of the 1,145 campers completing usable questionnaires.

The data in Tables 6 - 8 have also been supported by other studies in which we have found that mean scores to the stress-related DC scales tend to increase the closer the recreation site being studied is to large metropolitan areas (Knopf, et al., 1973).

Finally, Grubb (1975) found a relationship between levels of perceived job boredom and days of participation in three activities (boating, swimming, and fishing) which were viewed as "more stimulating than their jobs" by a large number of the auto workers studied. Apparently auto workers use these activities, in part, to help them cope with job boredom stress.

INTERPRETATIONS AND CONCLUSIONS

The results support our propositions that outdoor recreationists value their participation for purposes of stress mediation and that these preferences influence the choice of activity. Support was also found for the idea that stress-related recreation desires are related to home and work environmental conditions, or to specific problem states experienced back home or at work.

The combined findings of comparatively high importance of stress-related motivations and of relationships between stress-related recreation preferences and city size and neighborhood quality raise a difficult research and management question: Are we using our recreation areas and facilities to excess for coping with problems that reappear when the recreationist returns to his everyday life space? If environmental stressors are increasing both in absolute numbers and in relative

intensities, as many people perceive, another question may be asked: Should we not be providing more recreation opportunities, at least in and near larger centers of population, to help people cope temporarily? These are complex questions for which we do not now have the answers, but they point to clear needs.

We need to understand better the personal and social values or benefits of different types of recreation opportunities to different types of actual and potential recreationists and then attempt to meet these needs in the most effective and efficient ways. The need for these types of studies has been elaborated in two recent papers (Driver and Brown, 1975 and Driver, 1976a). Recreationists also need to understand better how their recreation-related needs can most appropriately be met to serve their individual purposes.

Our home, neighborhood, work and other environments will never be perfectly blissful, so recreation areas-facilities will always be used to mediate different types of stress, whether it be boredom, lack of mentally challenging and rewarding work, or too little opportunity for introspection and privacy. Research is needed on these stress-related reasons for participation as well as on the more positive reasons relating to learning, creativity, companionship and other types of enjoyment, growth and development. However, the primary need now appears to be research that can help pave the road away from study of a behavior that is merely symptomatic and toward research into the problems generating the symptoms.

NOTES

1. Howard and Scott use the general model to focus on stress causing problems that are perceived as threatening.
2. We prefer the word "preference," over "need," for recreation goods and services because of our belief that humans have few if any needs but instead have preferences of different strengths such as the rather strong preference to stay alive.
3. Our conceptual model and procedures have been explained in detail elsewhere (Knopf, 1972; Driver, 1976a and 1976b).
4. Our approach is consistent with expectancy-value theory, as proposed by Atkinson and Birch (1972), to the extent that one is willing to accept the proposition that we are simultaneously focusing on the incentive and motive dimensions of a behavioral tendency and holding the availability and expectancy dimensions relatively constant. We are interviewing participants while they are participating. Therefore, the opportunity is available, and the participant expects to get that to which he has already committed the behavior of arriving at the site where he was interviewed. Our focus on specific known, valued and expected consequences of the recreationist's choice of a specific activity (i.e., behavior) also should serve to increase the meaningfulness of the results (Fishbein and Ajzen, 1974; Ajzen and Fishbein, 1975).
5. In developing our desired consequence scales, we have attempted to select and refine individual items to reduce intercorrelations between mean scores on different scales. Because some of the constructs behind our stress-related scales are similar, several of these scales intercorrelate higher for specific types of recreationists than we prefer. However, for other specific groups they appear to be tapping separate dimensions of stress-related references, so we show them as separate scales.

6. We have found similar relationships between perceptions of work environment quality and stress-related motivations for recreating, such as to reduce role overload.

TABLE 1
MEAN SCORES TO SELECTED 9-POINT DESIRED CONSEQUENCE SCALES
BY SEVEN TYPES OF MICHIGAN RECREATIONISTS^a

| Scale ^c | Mean Score by Type of Recreationist ^b | | | | | | | Grand Mean ^c |
|------------------------------|--|---------------------|--------------------|-------------|---------------------|--------------|--------|-------------------------|
| | Trout Fishing | Backcountry Camping | Backcountry Hiking | Pic-nicking | Family Motorboating | Sail Boating | Tennis | |
| 1-Experience nature | 7.3 | 7.8 | 7.6 | 7.0 | 6.6 | 6.2 | 2.7 | 6.5 |
| 2-General escape | 6.2 | 6.4 | 5.6 | 6.5 | 6.1 | 5.6 | 4.3 | 5.8 |
| 3-Mental change | 5.7 | 5.4 | 5.4 | 6.3 | 5.6 | 5.2 | 5.1 | 5.5 |
| 4-Exploration | 5.0 | 5.7 | 6.7 | 5.2 | 5.2 | 5.7 | 3.5 | 5.3 |
| 5-General affiliation | 4.0 | 4.6 | 5.2 | 5.9 | 5.6 | 5.4 | 5.7 | 5.2 |
| 6-Avoid others' expectations | 4.9 | 5.6 | 5.0 | 5.5 | 5.0 | 4.4 | 4.3 | 5.0 |
| 6-Family togetherness | 4.0 | 5.7 | 4.6 | 5.9 | 7.2 | 4.4 | 3.5 | 5.0 |
| 7-Tension release | 3.9 | 4.1 | 4.2 | 5.4 | 4.6 | 4.6 | 5.8 | 4.7 |
| 7-Achievement | 4.7 | 3.9 | 4.9 | 3.0 | 4.1 | 5.7 | 6.7 | 4.7 |
| 7-Exercise-physical fitness | 3.6 | 3.8 | 5.6 | 4.1 | 4.0 | 4.2 | 7.3 | 4.7 |
| 8-Dominance-control | 2.5 | 2.7 | 3.5 | 2.2 | 2.8 | 3.5 | 3.5 | 3.0 |
| 9-Thrill seeking | 2.6 | 2.4 | 3.4 | 2.3 | 2.5 | 3.5 | 2.3 | 2.7 |
| 10-Social status | 3.3 | 2.5 | 3.4 | 2.2 | 2.6 | 3.2 | 3.6 | 2.1 |
| N | 25 | 49 | 47 | 56 | 50 | 49 | 46 | NA |

a. Mean scores were computed for responses to all items in each 9-point scale on which 9 represents Extremely Important and 1 represents Not At All Important.

b. Backcountry camping and hiking refer to activities in an undeveloped natural area.

c. Scales are listed in rank order with the rank determined by the unweighted mean score for all 7 activities.

Other activities and preferences can be found in the source of this table. cf. Knop

TABLE 2

BELLE ISLE RECREATIONISTS' MEAN RESPONSES TO FOUR 9-POINT
DESIRED CONSEQUENCE SCALES BY TYPE OF ACTIVITY ENGAGED IN^a

| Activity | N | Mean Response by Motivation Scale | | | |
|---------------|-----|-----------------------------------|---------------------|-------------|------------------------|
| | | Achievement | Temporary Escape | Affiliation | Family Togetherness |
| Bank Fishing | 70 | 4.9 | 6.8 | 6.4 | 6.0 |
| Boat Watching | 80 | 3.7 | 6.7 | 5.2 | 4.9 |
| Picnicking | 120 | 4.0 | 6.7 | 6.6 | 7.4 |

a. Data from Davis (1973) pg. 31

b. 9-point scale reflects coding of 9 for Extremely Important, and 1 for Not At All Important.

TABLE 3
 PERCENT OF NATIONAL SURVEY RESPONDENTS REPORTING
 DESIGNATED CONSEQUENCE WAS VERY OR MODERATELY IMPORTANT
 REASON FOR ENGAGING IN FAVORITE FORM OF OUTDOOR RECREATION^a

| Desired Consequence ^b | Percent (N=975) ^c | | |
|---|------------------------------|----------------------|-------|
| | Very Important | Moderately Important | Total |
| 1. It relieves my tensions | 59 | 25 | 84 |
| 2. I like to keep physically fit | 47 | 30 | 77 |
| 3. It provides an escape from the pressure of work | 48 | 26 | 74 |
| 4. It allows me to be with friends and other people | 33 | 32 | 65 |
| 5. I can spend more time with the family | 39 | 18 | 57 |
| 6. It's a change from city life | 38 | 20 | 56 |
| 7. I can do it on the spur of the moment | 25 | 24 | 49 |
| 8. I like to perfect my skills at it | 21 | 24 | 45 |
| 9. It gives me a chance to meet new people | 17 | 22 | 39 |
| 10. I enjoy telling others about it later | 18 | 18 | 36 |
| 11. It allows me to get away from people | 19 | 16 | 35 |
| 12. I can demonstrate my skills to other people | 8 | 11 | 19 |

a. Data from Mandell and Marans, 1972, pg. 4-14.

b. The reasons shown are individual items from 12 different desired consequence scales, with 1 being from a Tension Release scale and 2 being from a Physical Fitness-Exercise scale.

c. The 4-point response format also included Not Very and Not At All Important.

TABLE 4

PERCENT OF AUTO WORKERS REPORTING THAT DESIGNATED
CONSEQUENCE WAS A VERY OR QUITE IMPORTANT REASON FOR
PARTICIPATING IN THEIR FAVORITE RECREATION ACTIVITY^a

| Abbreviated Consequence | Percent (N=223) ^b | | |
|----------------------------------|------------------------------|--------------------|-------|
| | Very Important | Quite Important | Total |
| 1. More stimulating than job | 58 | 26 | 84 |
| 2. Helps relieve tensions | 54 | 26 | 80 |
| 3. Escape from pressures of work | 56 | 21 | 77 |
| 4. Gives feeling of freedom | 52 | 24 | 76 |
| 5. Be with people liked | 44 | 29 | 73 |
| 6. Do something different | 37 | 30 | 67 |
| 7. To spend time with family | 44 | 22 | 66 |
| 8. Keep physically fit | 35 | 27 | 62 |
| 8. Explore new things | 34 | 28 | 62 |
| 9. Get outdoors | 36 | 23 | 59 |
| 10. Improve skills | 37 | 21 | 58 |
| 11. Change from city life | 30 | 22 | 52 |
| 12. Meet new people | 24 | 24 | 48 |
| 13. Do on spur of moment | 23 | 21 | 44 |
| 13. Be creative | 22 | 22 | 44 |
| 14. Demonstrate skills | 24 | 16 | 40 |
| 15. Tell others about it | 15 | 19 | 34 |
| 16. Be alone | 19 | 12 | 31 |

a. Data from Grubb (1973) Appendix A.

b. Other response alternatives on the 5-point format were Moderate, Slight and No Importance.

TABLE 5

MEAN SCORES OF FIVE GROUPS OF MICHIGAN RECREATIONISTS
TO SPECIFIC 6-POINT STRESS-RELATED SCALES^a

| Stress-related Scale | Type Activity ^b | | | | |
|-------------------------------|----------------------------|-----------------|---------------|---------|------------|
| | N.M. Campers | S.M. Campers | Coho Fish. | Canoers | Picnickers |
| Seek Change | 5.0 | 4.8 | 4.3 | 4.3 | 4.1 |
| Slow Down Mentally | 4.1 | 4.1 | 3.6 | 3.2 | 3.3 |
| Arousal Seeking | 2.0 | 2.3 | 2.9 | 2.8 | 1.9 |
| Avoid General Pressures | 3.4 | 3.4 | 2.8 | 2.6 | 2.7 |
| Avoid Physical Stressors | 3.0 | 2.9 | 2.8 | 2.9 | 2.8 |
| Seeking Autonomy | 2.8 | 2.7 | 2.8 | 2.8 | 2.8 |
| Avoid Others' Expectations | 3.3 | 3.4 | 2.7 | 2.5 | 2.2 |
| Seek Secure Environment | 3.1 | 3.0 | 2.5 | 2.7 | 2.4 |
| Ease of Effort | 2.9 | 2.6 | 2.5 | 2.2 | 2.2 |
| Avoid Social Regulation | 2.2 | 2.4 | 2.4 | 2.2 | 1.9 |
| Release Tension | 3.0 | 2.9 | 2.3 | 2.3 | 2.5 |
| Seek Action or Thrills | 1.6 | 1.9 | 2.1 | 2.3 | 1.6 |
| SAMPLE SIZE | 95 | 40 | 40 | 50 | 45 |

a. Response format was 6-point with 6 = Extremely and 1 = Not At All Important.

b. S.M. Campers and N.M. Campers designate campers in southern (S.M.) and in northern (N.M.) Michigan State Parks. S.M. = highly developed campground about 40 miles from Detroit, and N.M. = modern but rustic campgrounds in northern part of Michigan's Lower Peninsula. Canoers were members of group-sponsored trips floating Michigan's Au Sable River. Coho salmon fishermen were interviewed on rivers near Traverse City, Michigan, and picnickers were day users of state parks.

TABLE 6

RELATIONSHIP BETWEEN ENGAGING IN FAVORITE
OUTDOOR RECREATION ACTIVITY FOR TEMPORARY
ESCAPE AND PERCEPTIONS OF NEIGHBORHOOD QUALITY^a

| Neighborhood Quality Index | | N | % Very or Moderately Important ^b |
|----------------------------------|---|-----|--|
| 1. <u>Maintenance Level</u> | | | |
| Poorly Kept Up | 1 | 54 | 65 |
| | 2 | 73 | 56 |
| | 3 | 237 | 51 |
| | 4 | 243 | 49 |
| Well Kept Up | 5 | 410 | 45 |
| 2. <u>Level of Crowding</u> | | | |
| Crowded | 1 | 82 | 69 |
| | 2 | 100 | 48 |
| | 3 | 228 | 51 |
| | 4 | 182 | 44 |
| Uncrowded | 5 | 428 | 47 |
| 3. <u>Level of Noise</u> | | | |
| Noisy | 1 | 96 | 68 |
| | 2 | 69 | 58 |
| | 3 | 192 | 53 |
| | 4 | 212 | 42 |
| Not Noisy | 5 | 450 | 46 |
| 4. <u>Level of Air Pollution</u> | | | |
| Polluted Air | 1 | 132 | 64 |
| | 2 | 106 | 49 |
| | 3 | 205 | 54 |
| | 4 | 215 | 48 |
| Clean Air | 5 | 360 | 41 |

a. Data are from national household survey by Mandell and Marans (1972), pg. V-7.

b. This column indicates the percent of the respondents in each of the quality index classes who said temporary escape was either a Very or Moderately Important reason for engaging in their favorite outdoor recreation activity. The other two response alternatives were Not Very and Not At All Important.

TABLE 7

RELATIONSHIPS BETWEEN PERCEPTIONS OF NEIGHBORHOOD
QUALITY AND SELECTED STRESS-RELATED PREFERENCES
OF 100 MICHIGAN CAMPERS

| Neighborhood Quality Index | | Mean Response to Designated Stress-Related Scale ^{a b} | N |
|---|---|--|----|
| 1. <u>Level of Neighborhood Noise</u> | | <u>Escape Physical Stressors^c</u> | |
| Quiet | 1 | 2.5 | 37 |
| | 2 | 3.1 | 24 |
| | 3 | 3.3 | 16 |
| | 4 | 4.1 | 10 |
| Noisy | 5 | 4.1 | 13 |
| 2. <u>Level of Safety</u> | | <u>Seek Secure Soc. Environ.</u> | |
| Safe Streets | 1 | 2.9 | 38 |
| | 2 | 2.8 | 16 |
| | 3 | 3.0 | 22 |
| | 4 | 3.4 | 15 |
| Unsafe Streets | 5 | 3.7 | 9 |
| 3. <u>Neighborhood Good Place To Live</u> | | <u>Tension Release</u> | |
| Very Good | 1 | 2.5 | 56 |
| | 2 | 3.5 | 28 |
| | 3 | 3.7 | 13 |
| | 4 | 3.8 | 3 |
| Very Poor | 5 | --- | 0 |

a. Responses were to a 6-point scale on which 6 represents Extremely Important and 1 represents Not At All Important.

b. Rank-ordered Spearman correlation coefficients between scores on the stress-related scales and perception of neighborhood quality (on the 5-point semantic differential format shown in the left column) were $\geq .35$ for the scales shown and tested different from zero at $p \geq .01$.

c. Two of the five items in the Escape Physical Stressors scale were clearly related to noise.

TABLE 8

MEAN RESPONSES TO THREE 6-POINT STRESS-RELATED SCALES
BY 100 MICHIGAN CAMPERS BY SIZE OF HOME CITY

| Size of Respondent's Home City | N | Mean Response to Designated Scale ^a | | |
|--|----|--|--|-------------------|
| | | Escape Physical Stressors | Desire Secure Social Environment | Desire Privacy |
| Central Area of City of +500,000 | 8 | 4.9 | 4.2 | 3.7 |
| Central Area of City of 100-500,000 | 10 | 3.5 | 3.2 | 2.8 |
| Suburb of Above Sized Cities | 23 | 3.4 | 3.2 | 2.3 |
| City of 50-100,000 | 13 | 3.4 | 3.3 | 2.3 |
| Town of 10,000 | 15 | 3.1 | 3.3 | 2.0 |
| Town of -5,000 or Rural Area | 31 | 2.4 | 2.4 | 1.9 |

a. Responses were to a 6-point scale on which 6 represents Extremely Important and 1 represents Not At All Important.

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